

What is claimed:

1. A system for ensuring proper procedures for joining polyethylene pipe and fittings as required by regulatory authorities comprising:

means providing the hardware and software for performing Department of Transportation covered tasks;

means for teaching, testing and/or evaluating the performance of said Department of Transportation covered tasks; and

means of documenting the results of said teaching, testing and/or evaluating of said performance of said Department of Transportation covered tasks.

2. A system for ensuring proper procedures for joining polyethylene pipe and fittings as required by regulatory authorities according to claim 1 wherein said Department of Transportation covered tasks are selected from mechanical, heat fusion and electro-fusion.

3. A system for ensuring proper procedures for joining polyethylene pipe and fittings as required by regulatory authorities according to claim 2 wherein a said mechanical covered task includes compression, bolt-on or stab-on connections.

4. A system for ensuring proper procedures for joining polyethylene pipe and fittings as required by regulatory authorities according to claim 2 wherein said heat fusion covered tasks includes butt fusion, socket fusion or sidewall fusion.

1 5. A system for ensuring proper procedures for joining polyethylene pipe and fittings as required
2 by regulatory authorities according to claim 2 wherein said electro-fusion covered task
3 includes in-line coupling fusion or saddle fusion.

1 6. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting to weld the fitting to a thermoplastic pipe comprising:

3 a voltage source;

4 a microprocessor operated voltage control circuit connected to said voltage source
5 and having an output removably connectable to an electric heat weldable thermoplastic fitting;

6 an amperage measurement circuit in association with said voltage control circuit for
7 determining current flow through said heat weldable thermoplastic fitting; and

8 an input system connected to said voltage control circuit to impart characteristics of
9 the weldable thermoplastic fitting and ambient conditions, the voltage control system serving
10 to apply proper voltage for a determined time to complete thermoplastic welding of the fitting
11 to a thermoplastic pipe.

1 7. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 6 including;

3 an ambient temperature circuit forming a part of said input system.

1 8. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 6 including;

3 a sensor for detecting the temperature of said weldable thermoplastic fitting; and

4 a logic circuit responsive to said sensor forming a part of said input system.

1 9. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 6 including;

3 feed-back logic circuitry interconnected between said weldable thermoplastic fitting
4 and said voltage control circuit.

1 10. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 6 wherein said weldable thermoplastic fitting has
3 thereon a bar code having encoded information relating to requirements for to successful
4 welding application thereof and wherein said input system includes a bar code reader.

1 11. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 6 including an information storage system in
3 communication with said input system by which information as to the parameters employed
4 in the application of an electric heat weldable thermoplastic fitting to a thermoplastic pipe are
5 stored.

1 12. A system for controlling the application of electrical energy to an electric heat weldable
2 thermoplastic fitting according to claim 11 including a printer in communication with said
3 information storage system for providing a print out of the details of welding an electric heat
4 weldable thermoplastic fitting to a plastic pipe.

1 13. A method of ensuring that installations of electric heat weldable thermoplastic fittings to
2 plastic pipe meet governmental and/or industrial standards, comprising the steps of:

- 3 (a) for each installation, measuring physical parameters employed in the application of a
4 heat weldable thermoplastic fittings to a plastic pipe;
5 (b) recording the values of parameters measured in step (a) as to each installation;
6 (c) comparing the values recorded in step (b) for each installation with approved pre-
7 established standards; and
8 (d) providing a record of the results of step (c) identifying installations that meet and/or
9 those that don't meet said pre-established approved standards.

1 14. A method of ensuring that installations of electric heat weldable thermoplastic fitting to plastic
2 pipe meet governmental and/or industrial standards according to claim 13 wherein step (a)
3 includes measuring the voltage, current, and time of application of voltage applied to electric
4 heat weldable fittings.

1 15. A method of ensuring that installations of electric heat weldable thermoplastic fitting to plastic
2 pipe meet governmental and/or industrial standards according to claim 13 including measuring
3 and recording, as to each installation, the applicable ambient temperature.

1 16. A method of ensuring that installations of electric heat weldable thermoplastic fitting to plastic
2 pipe meet governmental and/or industrial standards according to claim 13 wherein each said
3 heat weldable thermoplastic fitting has thereon a bar code having encoded information
4 relating to requirements for the successful welding application thereof and including the step
5 of reading said bar code and employing information obtained therefrom to provide at least a
6 portion of said approved pre-established standards.

1 17. A method of ensuring that installations of electric heat weldable thermoplastic fitting to plastic
2 pipe meet governmental and/or industrial standards according to claim 13 including the step
3 of storing information as to the parameters employed in the application of each electric heat
4 weldable thermoplastic fitting to a thermoplastic pipe.

1 18. A method of ensuring that installations of electric heat weldable thermoplastic fitting to plastic
2 pipe meet governmental and/or industrial standards according to claim 14 including the step
3 of printing out a permanent record of the steps employed in applying each electric heat
4 weldable thermoplastic fitting to a plastic pipe.